I HOPE:
MORE SWITCHING LESS ROUTING

APRIL 20th 1994 Interviewed Leased LINE.

BRAZIL # (6)

HONG KONG.

Name of Me. TB.

Presentation UETS

"...A SENTENCE FROM YOU ..."

(Here I will write a sentence that defines your work or your thoughts. This can be taken from your writings. Or from the interview..)

CHINA

HUALIN QIAN

NAME SURNAME – TITLE. CHIEF SCIENTIST [CHINESE ACADEMY OF SCIENCES

Interviewed on February 9-4-2014 in [redacted] (HK)

Born in [DATE] in [PLACE]

1940.12.20 SHAGHAI, CHINA

1965

E-mail address

Links related to you

WORK

Studies and Brief CV

USTC

1960~1965, Study in University of Science and Technology of China (CS)

1965~1995. Institute of Computing Technology, ICT Chinese Academy of Sciences,

1995~2014 Computer [redacted] Network Info. Center, Chinese Academy of Sciences (CAS).

CNIC → VP of CAS same level than a Vice MINISTER

E-mail address hlqian@cnic.cn.

Links related to you

Do you remember when you had your first contact with a computer?

. Yes[1]

Quite early. The first was setup by chinese Academy of Sciences

NAME=103

1962 Vacuum tube.

USTC → There was another one. Punched tapes. Black tape

What was your first contact/experience with Internet or ARPANET?

(And When)

1980 Computer network.

First time I touched ARPANet in GEORGIA TECH,

1982 was 2 years sent by my goverment.

My govern and Frankenfurt was selected to go

1983-1984 to develop X.25 network with research institutes.

setup and connect a few nodes with a machine.

1984 When finished we brought few nodes to ICT and we put them in diff. building and with copper wire we connected few buildings.

[1] In that

1990 ASIA Games: first time for china to do international sports games.
I was working with my colleagues since 1985 to create the network to connect SITES (sports Buildings) in BEIJING.

VOICE
DATA
FAX
→ In a PC to be a FAX machine. | automatically turn on and off when faxes arrived. | developing software for each sport. Some of it were imported from other countries.

1989 World Bank loan project. Big amount 4.2M US$ to support our network. A supercomputer center wasn't convenient to go to the room, so the bank suggested to create a LAN → (MAN) connecting facilities.
Speed > 10 Mbps. We wrote the proposal, which won (1990)
The gov. asked to setup a new institute, which had to be approved by gov.
We did our work by the expert group the

[SHINGAI UNIV.
PEKIN UNIV
ICT] → Preparing the organization.

In 1992 we finished 2 UNIV campuses. And 20 institutes were connected with fiber ICT. (begin of 1993 we finished all).
The World bank loan didn't support the international link but the Supp. center + MAN.

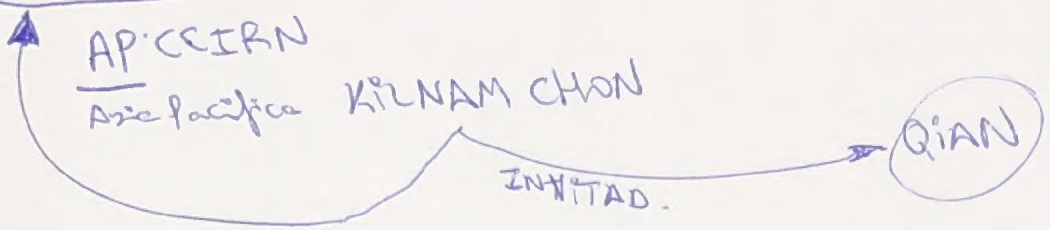
We had DECNet. and X.25. The PTT had CHINAPAC. NO ~~ICP/IP~~.
We tried +

1992 INET in KOBE in JAPAN.
First to talk to Steve Goldstein (NSF net) they were connecting 16 regions.
and his Wolff Steve (job) assigned the job to SPRINT I talked to him
he told me he couldn't give me an answer.
Madame Hu, she was the VP of CAS and 18 months later we were connected in 1994.

1993 August INET in SFO. There was a workshop (I was selected) to support registration.
2003-2006, 5 days intense I met Dave Farber, Cerf and my network of internet engineers.
BOARD MEMBER.

After 1993 INET ISOC meeting:

CCIRN : Coordination Comet for Inter Research Network.



RIGHT AFTER the INET

1993 I was invited to participate to that meeting and USSR and CHINA were allowed to connect to NSFNET.
They asked (CCIRN) to NSF to allow us.

End of 1993 formally accepted.
Then in March 1994 we connected through Sprint
64Kbps link (satellite) BEIJING to SKY
SKY to HAWAII.

The latency was several hundred milliseconds.
Madame Hu talked to many people.
1994 APRIL NSF + CAS had a meeting and officially agreed.

In your opinion, what are the key characteristics of Internet?

It's OPEN!!! As the PC is open too we could do that. (add things).
that's why is succesful. If it's not, I don't think
it went so well.

What do you consider the most important milestones in the development of the network?

- 19..

April 20 1994 • CONNECTION to The Internet
May 21ST 1994. DEVELOPMENT/SETUP/BUILDING DNS Servers

How did you contribute to the development of the Internet?
(How it contributed to the development of the Network?)

Connecting

- In 1992 we wrote to INTERNIC, .CH was already registered by T.B. QiAN and professor ZORN helped them to connect he relayed our email.
- We talked to ZORN to bring back the .CH We prepared the DNS server up to | CHINA Research Net / CHINA Academic Net / And a THIRD | Registered but not used. MAY 21ST 1994 Was working with DNS Running.

ADMIN CONTACT — T.B. QiAN — I Was The TECH CONTACT. — NOW BOTH CONTACTS.

Heart Trouble 1997 PASSED AWAY

Who are some key people in the development of Internet, leaders or trendsetters? Madame HU.

- To Xing-Gang Wang, Yinglin Ma (together with me engineering project), Daoyuan Hu.
- To

Two anecdotal situations Relate here some unknown / underreported situations

1992/93 Theoretical physics. 3.000 preprints papers. Our researchers received. the Director of the institute complain to the PRESIDENT that they were isolated. Few days earlier an study was conducted, but presented by ISRAEL. They was publicating it. the CAS president

What do you think about the future of Internet?
(Two or three key aspects of the future).

If we shared our line there was a fine of 40% ADD in the price. 30 times 40% Madame HU talked to the Vice Minister (they were some level) to remove that.

2 CHALLENGES: ARCHITECTURE — no ideal now. You can't control the pass through you can't support the Quality of Service (very difficult).
SECURITY

SECURITY: TOO MANY PARTS OF THE INET Can be attacked. 500M mobiles (80% INET ENABLED)

The Key Issue is using SWITCHES but not ROUTING. Like MPRS (still needs routing).

Do you see any technological trends?

More switching less routing.

ADDITIONAL READING

PAPERS & BOOKS MENTIONED / RECOMMENDED

2008 In Chinese SWITCHING ARCHITECTURE, (Switching IP packets instead of).